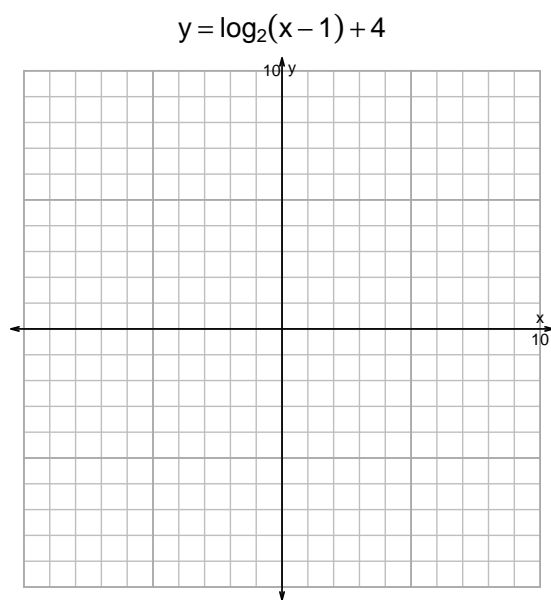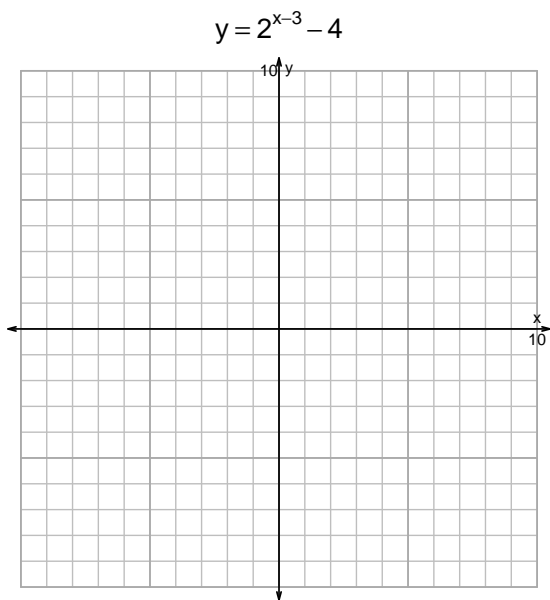Name: _____   Date: _____

s18: EXP LOG (QUIZ v336)

1. (10 pts) Graph $y = 2^{x-3} - 4$ and $y = \log_2(x-1) + 4$ on the grids below. Also, draw any asymptotes with dashed lines.
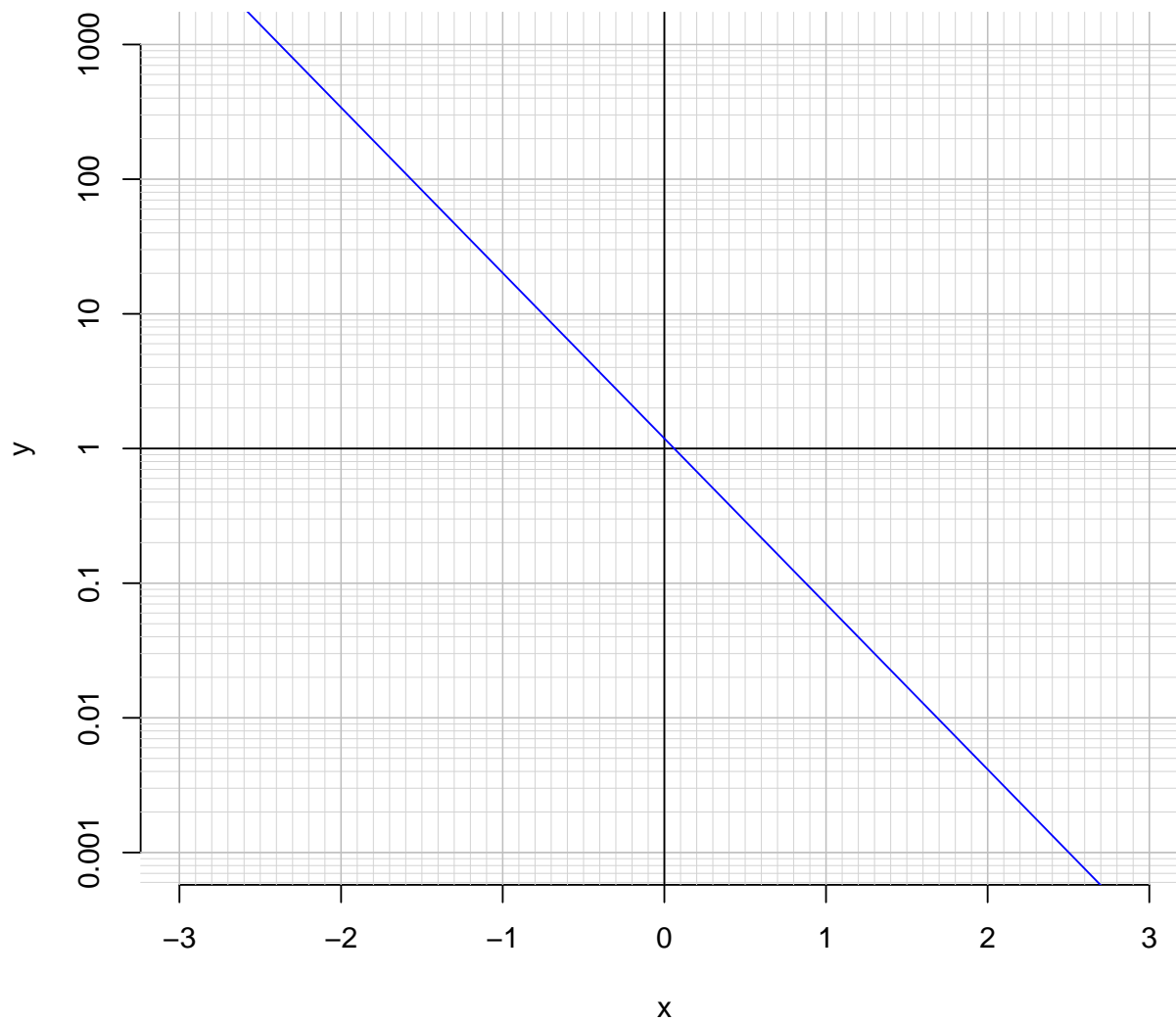
$$y = 2^{x-3} - 4$$

$$y = \log_2(x-1) + 4$$

Somewhat useful hint: $2^3 = 8$, and thus $\log_2(8) = 3$.

2. (10 pts) Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression. Please do not do any arithmetic; just move numbers around.

$$29 = \left(\frac{5}{7}\right) \cdot 2^{-3t/4}$$

3. (10 pts) An exponential function $f(x) = 1.19 \cdot e^{-2.83x}$ is graphed below on a semi-log plot.

a. Using the plot above, evaluate $f(-2.2)$.

b. The inverse function is logarithmic.

$$f^{-1}(x) = \frac{-1}{2.83} \cdot \ln\left(\frac{x}{1.19}\right)$$

Using the plot above, evaluate $f^{-1}(0.03)$.